

IFWO

RAW SEQUENCE LISTING

DATE: 09/21/2004

RAW SEQUENCE LISTING DATE: 09/21/200
PATENT APPLICATION: US/10/767,869 TIME: 15:51:21

Input Set : A:\66797-397.txt

Output Set: N:\CRF4\09212004\J767869.raw

CROTTENCE LICETIC

		SEQUENCE LISTING
2	(1) GENE	RAL INFORMATION:
4	(i)	APPLICANT: HUSE, WILLIAM D.
8	(ii)	TITLE OF INVENTION: SURFACE EXPRESSION LIBRARIES OF
9)	HETEROMERIC RECEPTORS
13	(iii)	NUMBER OF SEQUENCES: 76
14	(iv)	CORRESPONDENCE ADDRESS:
15	5	(A) ADDRESSEE: McDermott Will & Emery
16	5	(B) STREET: 4370 LA JOLLA VILLAGE DRIVE, SUITE 700
17	7	(C) CITY: SAN DIEGO
18	3	(D) STATE: CALIFORNIA
19)	(E) COUNTRY: UNITED STATES
20)	(F) ZIP: 92122
22	(v)	COMPUTER READABLE FORM:
23	3	COMPUTER READABLE FORM: (A) MEDIUM TYPE: Floppy disk (B) COMPUTER: IRM PC compatible
24	<u>l</u>	(B) COMPUTER: IBM PC compatible
25	5	(C) OPERATING SYSTEM: PC-DOS/MS-DOS
26	5	(D) SOFTWARE: PatentIn Release #1.0, Version #1.25
28	(vi)	CURRENT APPLICATION DATA:
C> 29	•	(A) APPLICATION NUMBER: US/10/767,869
C> 30)	(B) FILING DATE: 28-Jan-2004
3:	L	(C) CLASSIFICATION:
33	(viii)	ATTORNEY/AGENT INFORMATION:
34	1	(A) NAME: Gay, David A.
3 !	5	(B) REGISTRATION NUMBER: 39,200
36	5	(C) REFERENCE/DOCKET NUMBER: 66797-397
39) (ix)	TELECOMMUNICATION INFORMATION:
40)	(A) TELEPHONE: 619-535-9001
4:	L	(B) TELEFAX: 619-535-8949
4	1 (2) INFO	RMATION FOR SEQ ID NO: 1:
4	7 (i)	SEQUENCE CHARACTERISTICS:
48	3	(A) LENGTH: 7445 base pairs
4 9	€	(B) TYPE: nucleic acid
5	ס	(C) STRANDEDNESS: both
5		(D) TOPOLOGY: circular
54		SEQUENCE DESCRIPTION: SEQ ID NO: 1:
		TA CTATTAGTAG AATTGATGCC ACCTTTTCAG CTCGCGCCCC AAATGAAAAT 60
		AC AGGTTATTGA CCATTTGCGA AATGTATCTA ATGGTCAAAC TAAATCTACT 120
		GA ATTGGGAATC AACTGTTACA TGGAATGAAA CTTCCAGACA CCGTACTTTA 180
		TT TAAAACATGT TGAGCTACAG CACCAGATTC AGCAATTAAG CTCTAAGCCA 240
		AA TGACCTCTTA TCAAAAGGAG CAATTAAAGG TACTCTCTAA TCCTGACCTG 300
		TG CTTCCGGTCT GGTTCGCTTT GAAGCTCGAA TTAAAACGCG ATATTTGAAG 360
6	4 TCTTTCGG	GC TTCCTCTTAA TCTTTTTGAT GCAATCCGCT TTGCTTCTGA CTATAATAGT 420

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<i>6</i> E	CACCCTAAAC	አ <i>ር</i> ርጥር አ ጥጥጥ	TGATTTATGG	TCATTCTCGT	TTTCTGAACT	GTTTAAAGCA .	480
66	TTTCAGGGGG	ΔΤΤΓΔΔΤGAA	TATTTATGAC	GATTCCGCAG	TATTGGACGC	TATCCAGTCT	540
67	A A A CA TITUTA	CTATTACCCC	CTCTGGCAAA	ACTTCTTTTG	CAAAAGCCTC	TCGCTATTT	600
68	CCTTTTTATC	GTCGTCTGGT	AAACGAGGGT	TATGATAGTG	TTGCTCTTAC	TATGCCTCGT	660
69	A A TITTIFIC	GGCGTTATGT	ATCTGCATTA	GTTGAATGTG	GTATTCCTAA	ATCTCAACTG	7 20
70	AMITCUITT	CTACCTGTAA	TAATGTTGTT	CCGTTAGTTC	GTTTTATTAA	CGTAGATTTT	780
71	TOTTCCCAAC	CTCCTGACTG	GTATAATGAG	CCAGTTCTTA	AAATCGCATA	AGGTAATTCA	840
72	CANTCATTAA	Δατταλλλττ	AAACCATCTC	AAGCCCAATT	TACTACTCGT	TCTGGTGTTT	900
	CHAIGAITAA	CAACCCTTAT	TCACTGAATG	AGCAGCTTTG	TTACGTTGAT	TTGGGTAATG	960
73	AATTATCCCCCT	TCTTCTCAAG	ልጥጥልርጥርጥጥር	ATGAAGGTCA	GCCAGCCTAT	GCGCCTGGTC	1020
74	MAIAICCGGI	TCTTGTCAAG	TCTTTCAAAG	TTGGTCAGTT	CGGTTCCCTT	ATGATTGACC	1080
75	CTCTCCCCCT	CCTTCCCCCT	AAGTAACATG	GAGCAGGTCG	CGGATTTCGA	CACAATTTAT	1140
76	GICIGCGCCI	TACAAATCTC	CCTTCTACTT	TGTTTCGCGC	TTGGTATAAT	CGCTGGGGGT	1200
77	CAGGCGAIGA	TACAAATCIC	TATTCTTCC	CCTCTTTCGT	ТТТАССТТСС	TGCCTTCGTA	1260
78	CAAAGATGAG	TGITTIAGIG	COTTUNATO	AAACTTCCTC	ATGAAAAAGT	CTTTAGTCCT	1320
79	GTGGCATTAC	GTATTTTACC	CGITIAAIGG	TCCGATGCTG	TOTTTCCCTC	CTGAGGGTGA	1380
80	CAAAGCCTCT	GTAGCCGTTG	TIPLA A CTICCOT	GCAAGCCTCA	CCCACCGAAT	ATATCGGTTA	1440
81	CGATCCCGCA	AAAGCGGCCT	TIAACICCCI	CGCAACTATC	GCGACCOAAT	TGTTTAAGAA	1500
82	TGCGTGGGCG	ATGGTTGTTG	TCATIGICGG	TACAATTAAA	CCCTCCTTTT	CCACCCTTTT	1560
83	ATTCACCTCG	AAAGCAAGCT	GATAAACCGA	TACAATTAAA	TTTCCTTTT ACT	TCTTCCTTTC	1620
84	TTTTTGGAGA	TTTTCAACGT	GAAAAAATTA	TTATTCGCAA	A A CCCCATAC	ACD AD ATTCA	1680
85	TATTCTCACT	CCGCTGAAAC	TGTTGAAAGT	TGTTTAGCAA	AACCCCATAC	TCACCCTTCT	1740
86	TTTACTAACG	TCTGGAAAGA	CGACAAAACT	TTAGATCGTT	ACGCIAACIA	TTACCCTACA	1800
87	CTGTGGAATG	CTACAGGCGT	TGTAGTTTGT	ACTGGTGACG	AAACICAGIG	TTACGGTACA	1860
88	TGGGTTCCTA	TTGGGCTTGC	TATCCCTGAA	AATGAGGGTG	GIGGCICIGA	GGGTGGCGGT	1920
89	TCTGAGGGTG	GCGGTTCTGA	GGGTGGCGGT	ACTAAACCTC	AUCCCCCTCC	TGATACACCT	1980
90	ATTCCGGGCT	ATACTTATAT	CAACCCTCTC	GACGGCACTT	ATCCGCCTGG	TACTGAGCAA	2040
91	AACCCCGCTA	ATCCTAATCC	TTCTCTTGAG	GAGTCTCAGC	CTCTTAATAC	TIICAIGIII	2100
92	CAGAATAATA	GGTTCCGAAA	TAGGCAGGGG	GCATTAACTG	TTTATACGGG	CACTGTTACT	2160
93	CAAGGCACTG	ACCCCGTTAA	AACTTATTAC	CAGTACACTC	CIGIATCAIC	AAAAGCCATG	2220
94	TATGACGCTT	ACTGGAACGG	TAAATTCAGA	GACTGCGCTT	TCCATTCTGG	CTTTAATGAA	2280
95	GATCCATTCG	TTTGTGAATA	TCAAGGCCAA	TCGTCTGACC	TGCCTCAACC	TCCTGTCAAT	2340
96	GCTGGCGGCG	GCTCTGGTGG	TGGTTCTGGT	GGCGGCTCTG	AGGGTGGTGG	CTCTGAGGGT	2400
97	GGCGGTTCTG	AGGGTGGCGG	CTCTGAGGGA	GGCGGTTCCG	GTGGTGGCTC	TGGTTCCGGT	2460
98	GATTTTGATT	ATGAAAAGAT	GGCAAACGCT	AATAAGGGGG	CTATGACCGA	AAATGCCGAT	
99	GAAAACGCGC	TACAGTCTGA	CGCTAAAGGC	AAACTTGATT	CTGTCGCTAC	TGATTACGGT	2520
10	O GCTGCTATC	G ATGGTTTCA	T TGGTGACGT	T TCCGGCCTT	G CTAATGGTA	A TGGTGCTACT	2580
10	1 GGTGATTTT	G CTGGCTCTA	A TTCCCAAAT	G GCTCAAGTC	G GTGACGGTG	A TAATTCACCT	2640
10	2 TTAATGAAT	A ATTTCCGTC	A ATATTTACC	T TCCCTCCCT	C AATCGGTTG	A ATGTCGCCCT	2700
10	3 TTTGTCTTT	A GCGCTGGTA	A ACCATATGA	A TTTTCTATT	G ATTGTGACA	A AATAAACTTA	2760
10	4 TTCCGTGGT	G TCTTTGCGT	T TCTTTTATA	T GTTGCCACC	T TTATGTATG	T ATTTTCTACG	2820
10	5 TTTGCTAAC	A TACTGCGTA	A TAAGGAGTC	T TAATCATGC	C AGTTCTTT	G GGTATTCCGT	2880
10	6 TATTATTGC	G TTTCCTCGG	T TTCCTTCTG	G TAACTTTGT	T CGGCTATCI	G CTTACTTTTC	2940
10	7 TTAAAAAGG	G CTTCGGTAA	G ATAGCTATI	G CTATTTCAT	T GTTTCTTGC	T CTTATTATTG	3000
10	8 GGCTTAACT	C AATTCTTGT	G GGTTATCTC	T CTGATATTA	G CGCTCAATT	'A CCCTCTGACT	3060
1.0	9 TTGTTCAGG	G TGTTCAGTT	A ATTCTCCCG	T CTAATGCGC	T TCCCTGTTI	T TATGTTATTC	3120
11	0 TCTCTGTAA	A GGCTGCTAT	T TTCATTTT	G ACGTTAAAC	'A AAAAATCGI	T TCTTATTTGG	3180
1.1	1 ATTGGGATA	A ATAATATGG	C TGTTTATTI	T GTAACTGGC	'A AATTAGGCT	C TGGAAAGACG	3240
11	2 CTCGTTAGC	G TTGGTAAGA	T TCAGGATAA	A ATTGTAGCT	'G GGTGCAAA <i>F</i>	T AGCAACTAAT	3300
11	3 CTTGATTTA	A GGCTTCAAA	A CCTCCCGCA	A GTCGGGAGG	T TCGCTAAAA	C GCCTCGCGTT	3360

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			TTCTATATCT				3420
			CGGCTTGCTT				3480
			GGAAAGACAG				3540
117	AAATTAGGAT	GGGATATTAT	TTTTCTTGTT	CAGGACTTAT	CTATTGTTGA	TAAACAGGCG	3600
118	CGTTCTGCAT	TAGCTGAACA	TGTTGTTTAT	TGTCGTCGTC	TGGACAGAAT	TACTTTACCT	3660
119	TTTGTCGGTA	CTTTATATTC	TCTTATTACT	GGCTCGAAAA	TGCCTCTGCC	TAAATTACAT	3720
120	GTTGGCGTTG	TTAAATATGG	CGATTCTCAA	TTAAGCCCTA	CTGTTGAGCG	TTGGCTTTAT	3780
121	ACTGGTAAGA	ATTTGTATAA	CGCATATGAT	ACTAAACAGG	CTTTTTCTAG	TAATTATGAT	3840
122	TCCGGTGTTT	ATTCTTATTT	AACGCCTTAT	TTATCACACG	GTCGGTATTT	CAAACCATTA	3900
123	AATTTAGGTC	AGAAGATGAA	GCTTACTAAA	ATATATTTGA	AAAAGTTTTC	ACGCGTTCTT	3960
124	TGTCTTGCGA	TTGGATTTGC	ATCAGCATTT	ACATATAGTT	ATATAACCCA	ACCTAAGCCG	4020
125	GAGGTTAAAA	AGGTAGTCTC	TCAGACCTAT	GATTTTGATA	AATTCACTAT	TGACTCTTCT	4080
			TCGCTATGTT				4140
127	AGCGACGATT	TACAGAAGCA	AGGTTATTCA	CTCACATATA	TTGATTTATG	TACTGTTTCC	4200
128	ATTAAAAAAG	GTAATTCAAA	TGAAATTGTT	AAATGTAATT	AATTTTGTTT	TCTTGATGTT	4260
129	TGTTTCATCA	TCTTCTTTTG	CTCAGGTAAT	TGAAATGAAT	AATTCGCCTC	TGCGCGATTT	4320
130	TGTAACTTGG	TATTCAAAGC	AATCAGGCGA	ATCCGTTATT	GTTTCTCCCG	ATGTAAAAGG	4380
131	TACTGTTACT	GTATATTCAT	CTGACGTTAA	ACCTGAAAAT	CTACGCAATT	TCTTTATTTC	4440
132	TGTTTTACGT	GCTAATAATT	TTGATATGGT	TGGTTCAATT	CCTTCCATAA	TTCAGAAGTA	4500
133	TAATCCAAAC	AATCAGGATT	ATATTGATGA	ATTGCCATCA	TCTGATAATC	AGGAATATGA	4560
134	TGATAATTCC	GCTCCTTCTG	GTGGTTTCTT	TGTTCCGCAA	${\tt AATGATAATG}$	TTACTCAAAC	4620
135	TTTAAAATT	AATAACGTTC	GGGCAAAGGA	TTTAATACGA	GTTGTCGAAT	TGTTTGTAAA	4680
136	GTCTAATACT	TCTAAATCCT	CAAATGTATT	ATCTATTGAC	GGCTCTAATC	TATTAGTTGT	4740
137	TAGTGCACCT	AAAGATATTT	TAGATAACCT	TCCTCAATTC	CTTTCTACTG	TTGATTTGCC	4800
138	AACTGACCAG	ATATTGATTG	${\tt AGGGTTTGAT}$	ATTTGAGGTT	CAGCAAGGTG	ATGCTTTAGA	4860
139	TTTTTCATTT	GCTGCTGGCT	CTCAGCGTGG	CACTGTTGCA	$\tt GGCGGTGTTA$	ATACTGACCG	4920
140	CCTCACCTCT	GTTTTATCTT	CTGCTGGTGG	TTCGTTCGGT	${\bf ATTTTTAATG}$	GCGATGTTTT	4980
141	AGGGCTATCA	GTTCGCGCAT	TAAAGACTAA	TAGCCATTCA	AAAATATTGT	CTGTGCCACG	5040
142	TATTCTTACG	CTTTCAGGTC	${\tt AGAAGGGTTC}$	TATCTCTGTT	GGCCAGAATG	TCCCTTTTAT	5100
143	TACTGGTCGT	GTGACTGGTG	AATCTGCCAA	TGTAAATAAT	CCATTTCAGA	CGATTGAGCG	5160
144	TCAAAATGTA	GGTATTTCCA	TGAGCGTTTT	TCCTGTTGCA	ATGGCTGGCG	GTAATATTGT	5220
145	TCTGGATATT	ACCAGCAAGG	CCGATAGTTT	GAGTTCTTCT	ACTCAGGCAA	GTGATGTTAT	5280
146	TACTAATCAA	AGAAGTATTG	CTACAACGGT	TAATTTGCGT	GATGGACAGA	CTCTTTTACT	5340
147	CGGTGGCCTC	ACTGATTATA	AAAACACTTC	TCAAGATTCT	GGCGTACCGT	TCCTGTCTAA	5400
148	AATCCCTTTA	ATCGGCCTCC	TGTTTAGCTC	CCGCTCTGAT	TCCAACGAGG	AAAGCACGTT	· 5 4 60
149	ATACGTGCTC	GTCAAAGCAA	CCATAGTACG	CGCCCTGTAG	CGGCGCATTA	AGCGCGGCGG	5520
150	GTGTGGTGGT	TACGCGCAGC	GTGACCGCTA	CACTTGCCAG	CGCCCTAGCG	CCCGCTCCTT	5580
151	TCGCTTTCTT	CCCTTCCTTT	CTCGCCACGT	TCGCCGGCTT	TCCCCGTCAA	GCTCTAAATC	5640
152	GGGGGCTCCC	TTTAGGGTTC	CGATTTAGTG	CTTTACGGCA	CCTCGACCCC	AAAAAACTTG	5700
			${\tt AGTGGGCCAT}$				5760
154	CGTTGGAGTC	CACGTTCTTT	AATAGTGGAC	TCTTGTTCCA	AACTGGAACA	ACACTCAACC	5820
155	CTATCTCGGG	CTATTCTTTT	GATTTATAAG	GGATTTTGCC	GATTTCGGAA	CCACCATCAA	5880
156	ACAGGATTTT	CGCCTGCTGG	GGCAAACCAG	CGTGGACCGC	TTGCTGCAAC	TCTCTCAGGG	5940
			${\tt AGCTGTTGCC}$				6000
158	GGCGCCCAAT	ACGCAAACCG	CCTCTCCCCG	CGCGTTGGCC	${\tt GATTCATTAA}$	TGCAGCTGGC	6060
159	ACGACAGGTT	TCCCGACTGG	AAAGCGGGCA	GTGAGCGCAA	${\tt CGCAATTAAT}$	GTGAGTTAGC	6120
160	TCACTCATTA	GGCACCCCAG	GCTTTACACT	TTATGCTTCC	${\tt GGCTCGTATG}$	TTGTGTGGAA	6180
161	TTGTGAGCGG	ATAACAATTT	CACACGCGTC	ACTTGGCACT	GGCCGTCGTT	TTACAACGTC	6240
162	GTGACTGGGA	AAACCCTGGC	${\tt GTTACCCAAG}$	CTTTGTACAT	${\tt GGAGAAAATA}$	AAGTGAAACA	6300

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164	AAGCACTATT	GCACTGGCAC	TCTTACCGTT	ACCGTTACTG	TTTACCCCTG	TGACAAAAGC	6360
	CGCCCAGGTC	CAGCTGCTCG	AGTCAGGCCT	ATTGTGCCCA	GGGGATTGTA	CTAGTGGATC	6420
165	CTAGGCTGAA	GGCGATGACC	CTGCTAAGGC	TGCATTCAAT	AGTTTACAGG	CAAGTGCTAC	6480
166	TGAGTACATT	GGCTACGCTT	GGGCTATGGT	AGTAGTTATA	GTTGGTGCTA	CCATAGGGAT	6540
167	TAAATTATTC	AAAAAGTTTA	CGAGCAAGGC	TTCTTAAGCA	ATAGCGAAGA	GGCCCGCACC	6600
168	GATCGCCCTT	CCCAACAGTT	GCGCAGCCTG	AATGGCGAAT	GGCGCTTTGC	CTGGTTTCCG	6660
169	GCACCAGAAG	CGGTGCCGGA	AAGCTGGCTG	GAGTGCGATC	TTCCTGAGGC	CGATACGGTC	6720
170	GTCGTCCCCT	CAAACTGGCA	GATGCACGGT	TACGATGCGC	CCATCTACAC	CAACGTAACC	6780
171	TATCCCATTA	CGGTCAATCC	GCCGTTTGTT	CCCACGGAGA	ATCCGACGGG	TTGTTACTCG	6840
172	CTCACATTTA	ATGTTGATGA	AAGCTGGCTA	CAGGAAGGCC	AGACGCGAAT	TATTTTTGAT	6900
173	GGCGTTCCTA	TTGGTTAAAA	AATGAGCTGA	TTTAACAAAA	ATTTAACGCG	AATTTTAACA	6960
174	AAATATTAAC	GTTTACAATT	TAAATATTTG	CTTATACAAT	CTTCCTGTTT	TTGGGGCTTT	7020
175	TCTGATTATC	AACCGGGGTA	CATATGATTG	ACATGCTAGT	TTTACGATTA	CCGTTCATCG	7080
176	ATTCTCTTGT	TTGCTCCAGA	CTCTCAGGCA	ATGACCTGAT	AGCCTTTGTA	GATCTCTCAA	7140
177	AAATAGCTAC	CCTCTCCGGC	ATTAATTTAT	CAGCTAGAAC	GGTTGAATAT	CATATTGATG	7200
178	GTGATTTGAC	TGTCTCCGGC	CTTTCTCACC	CTTTTGAATC	TTTACCTACA	CATTACTCAG	7260
179	GCATTGCATT	TAAAATATAT	GAGGGTTCTA	AAAATTTTTA	TCCTTGCGTT	GAAATAAAGG	7320
	CTTCTCCCGC						7380
181	GCTCTGAGGC	TTTATTGCTT	AATTTTGCTA	ATTCTTTGCC	TTGCCTGTAT	GATTTATTGG	7440
	ACGTT						7445
184	(2) INFORMA	ATION FOR SE	EQ ID NO: 2	•			
185	(i) SH	EQUENCE CHAI	RACTERISTICS	S:			
186	((A) LENGTH:	7317 base p	oairs		-	
187		(B) TYPE: nu	ucleic acid	•			
188	((C) STRANDEI	ONESS: both				
		(C) OINTINDE	MESS: DOCI				
189	(,	Y: circular				
	-	(D) TOPOLOGY	Y: circular	EQ ID NO: 2:	:		
189 190	-	(D) TOPOLOGY EQUENCE DESC	Y: circular CRIPTION: SI	~		AAATGAAAAT	60
189 190 192	(xi) SE	(D) TOPOLOGY EQUENCE DESC CTATTAGTAG	Y: circular CRIPTION: SE AATTGATGCC	ACCTTTTCAG	CTCGCGCCCC		60 120
189 190 192 193	(xi) SE AATGCTACTA	(D) TOPOLOGY EQUENCE DESC CTATTAGTAG AGGTTATTGA	Y: circular CRIPTION: SH AATTGATGCC CCATTTGCGA	ACCTTTTCAG AATGTATCTA	CTCGCGCCCC ATGGTCAAAC	TAAATCTACT	
189 190 192 193 194	(xi) SE AATGCTACTA ATAGCTAAAC	(D) TOPOLOGY QUENCE DESC CTATTAGTAG AGGTTATTGA ATTGGGAATC	Y: circular CRIPTION: SH AATTGATGCC CCATTTGCGA AACTGTTACA	ACCTTTTCAG AATGTATCTA TGGAATGAAA	CTCGCGCCCC ATGGTCAAAC CTTCCAGACA	TAAATCTACT CCGTACTTTA	120
189 190 192 193 194 195	(xi) SE AATGCTACTA ATAGCTAAAC CGTTCGCAGA	(D) TOPOLOGY EQUENCE DESC CTATTAGTAG AGGTTATTGA ATTGGGAATC TAAAACATGT	Y: circular CRIPTION: SH AATTGATGCC CCATTTGCGA AACTGTTACA TGAGCTACAG	ACCTTTTCAG AATGTATCTA TGGAATGAAA CACCAGATTC	CTCGCGCCCC ATGGTCAAAC CTTCCAGACA AGCAATTAAG	TAAATCTACT CCGTACTTTA CTCTAAGCCA	120 180
189 190 192 193 194 195 196	(xi) SE AATGCTACTA ATAGCTAAAC CGTTCGCAGA GTTGCATATT	(D) TOPOLOGY EQUENCE DESC CTATTAGTAG AGGTTATTGA ATTGGGAATC TAAAACATGT TGACCTCTTA	Y: circular CRIPTION: SH AATTGATGCC CCATTTGCGA AACTGTTACA TGAGCTACAG TCAAAAGGAG	ACCTTTTCAG AATGTATCTA TGGAATGAAA CACCAGATTC CAATTAAAGG	CTCGCGCCCC ATGGTCAAAC CTTCCAGACA AGCAATTAAG TACTCTCTAA	TAAATCTACT CCGTACTTTA CTCTAAGCCA TCCTGACCTG	120 180 240
189 190 192 193 194 195 196	(xi) SE AATGCTACTA ATAGCTAAAC CGTTCGCAGA GTTGCATATT TCCGCAAAAA	(D) TOPOLOGY EQUENCE DESC CTATTAGTAG AGGTTATTGA ATTGGGAATC TAAAACATGT TGACCTCTTA CTTCCGGTCT	Y: circular CRIPTION: SH AATTGATGCC CCATTTGCGA AACTGTTACA TGAGCTACAG TCAAAAGGAG GGTTCGCTTT	ACCTTTTCAG AATGTATCTA TGGAATGAAA CACCAGATTC CAATTAAAGG GAAGCTCGAA	CTCGCGCCC ATGGTCAAAC CTTCCAGACA AGCAATTAAG TACTCTCTAA TTAAAACGCG	TAAATCTACT CCGTACTTTA CTCTAAGCCA TCCTGACCTG ATATTTGAAG	120 180 240 300
189 190 192 193 194 195 196 197	(xi) SE AATGCTACTA ATAGCTAAAC CGTTCGCAGA GTTGCATATT TCCGCAAAAA TTGGAGTTTG	(D) TOPOLOGY EQUENCE DESC CTATTAGTAG AGGTTATTGA ATTGGGAATC TAAAACATGT TGACCTCTTA CTTCCGGTCT TTCCTCTTAA	Y: circular CRIPTION: SH AATTGATGCC CCATTTGCGA AACTGTTACA TGAGCTACAG TCAAAAGGAG GGTTCGCTTT TCTTTTTGAT	ACCTTTTCAG AATGTATCTA TGGAATGAAA CACCAGATTC CAATTAAAGG GAAGCTCGAA GCAATCCGCT	CTCGCGCCC ATGGTCAAAC CTTCCAGACA AGCAATTAAG TACTCTCTAA TTAAAACGCG TTGCTTCTGA	TAAATCTACT CCGTACTTTA CTCTAAGCCA TCCTGACCTG ATATTTGAAG CTATAATAGT	120 180 240 300 360
189 190 192 193 194 195 196 197 198	(xi) SE AATGCTACTA ATAGCTAAAC CGTTCGCAGA GTTGCATATT TCCGCAAAAA TTGGAGTTTG TCTTTCGGGC	(D) TOPOLOGY EQUENCE DESC CTATTAGTAG AGGTTATTGA ATTGGGAATC TAAAACATGT TGACCTCTTA CTTCCGGTCT TTCCTCTTAA ACCTGATTT	Y: circular CRIPTION: SH AATTGATGCC CCATTTGCGA AACTGTTACA TGAGCTACAG TCAAAAGGAG GGTTCGCTTT TCTTTTTGAT TGATTTATGG	ACCTTTTCAG AATGTATCTA TGGAATGAAA CACCAGATTC CAATTAAAGG GAAGCTCGAA GCAATCCGCT TCATTCTCGT	CTCGCGCCC ATGGTCAAAC CTTCCAGACA AGCAATTAAG TACTCTCTAA TTAAAACGCG TTGCTTCTGA TTTCTGAACT	TAAATCTACT CCGTACTTTA CTCTAAGCCA TCCTGACCTG ATATTTGAAG CTATAATAGT GTTTAAAGCA	120 180 240 300 360 420
189 190 192 193 194 195 196 197 198 199 200	(xi) SE AATGCTACTA ATAGCTAAAC CGTTCGCAGA GTTGCATATT TCCGCAAAAA TTGGAGTTTG TCTTTCGGGC CAGGGTAAAG	(D) TOPOLOGY EQUENCE DESC CTATTAGTAG AGGTTATTGA ATTGGGAATC TAAAACATGT TGACCTCTTA CTTCCGGTCT TTCCTCTTAA ACCTGATTTT ATTCAATGAA	Y: circular CRIPTION: SHE AATTGATGCC CCATTTGCGA AACTGTTACA TGAGCTACAG TCAAAAGGAG GGTTCGCTTT TCTTTTTGAT TGATTTATGG TATTTATGAC	ACCTTTTCAG AATGTATCTA TGGAATGAAA CACCAGATTC CAATTAAAGG GAAGCTCGAA GCAATCCGCT TCATTCTCGT GATTCCGCAG	CTCGCGCCC ATGGTCAAAC CTTCCAGACA AGCAATTAAG TACTCTCTAA TTAAAACGCG TTGCTTCTGA TTTCTGAACT TATTGGACGC	TAAATCTACT CCGTACTTTA CTCTAAGCCA TCCTGACCTG ATATTTGAAG CTATAATAGT GTTTAAAGCA TATCCAGTCT	120 180 240 300 360 420 480
189 190 192 193 194 195 196 197 198 199 200 201	(xi) SE AATGCTACTA ATAGCTAAAC CGTTCGCAGA GTTGCATATT TCCGCAAAAA TTGGAGTTTG TCTTTCGGGC CAGGGTAAAG TTTGAGGGGG	(D) TOPOLOGY EQUENCE DESC CTATTAGTAG AGGTTATTGA ATTGGGAATC TAAAACATGT TGACCTCTTA CTTCCGGTCT TTCCTCTTAA ACCTGATTTT ATTCAATGAA CTATTACCCC	Y: circular CRIPTION: SH AATTGATGCC CCATTTGCGA AACTGTTACA TGAGCTACAG TCAAAAGGAG GGTTCGCTTT TCTTTTTGAT TGATTTATGG TATTTATGAC CTCTGGCAAA	ACCTTTTCAG AATGTATCTA TGGAATGAAA CACCAGATTC CAATTAAAGG GAAGCTCGAA GCAATCCGCT TCATTCTCGT GATTCCGCAG ACTTCTTTTG	CTCGCGCCCC ATGGTCAAAC CTTCCAGACA AGCAATTAAG TACTCTCTAA TTAAAACGCG TTGCTTCTGA TTTCTGAACT TATTGGACGC CAAAAGCCTC	TAAATCTACT CCGTACTTTA CTCTAAGCCA TCCTGACCTG ATATTTGAAG CTATAATAGT GTTTAAAGCA TATCCAGTCT TCGCTATTTT	120 180 240 300 360 420 480 540
189 190 192 193 194 195 196 197 198 199 200 201 202	(xi) SE AATGCTACTA ATAGCTAAAC CGTTCGCAGA GTTGCATATT TCCGCAAAAA TTGGAGTTTG TCTTTCGGGC CAGGGTAAAG TTTGAGGGGGG AAACATTTTA	(D) TOPOLOGY EQUENCE DESC CTATTAGTAG AGGTTATTGA ATTGGGAATC TAAAACATGT TGACCTCTTA CTTCCGGTCT TTCCTCTTAA ACCTGATTTT ATTCAATGAA CTATTACCCC GTCGTCTGGT	Y: Circular CRIPTION: SH AATTGATGCC CCATTTGCGA AACTGTTACA TGAGCTACAG TCAAAAGGAG GGTTCGCTTT TCTTTTTGAT TGATTTATGAC TATTTATGAC CTCTGGCAAA AAACGAGGGT	ACCTTTTCAG AATGTATCTA TGGAATGAAA CACCAGATTC CAATTAAAGG GAAGCTCGAA GCAATCCGCT TCATTCTCGT GATTCCGCAG ACTTCTTTTG TATGATAGTG	CTCGCGCCCC ATGGTCAAAC CTTCCAGACA AGCAATTAAG TACTCTCTAA TTAAAACGCG TTGCTTCTGA TTTCTGAACT TATTGGACGC CAAAAGCCTC TTGCTCTTAC	TAAATCTACT CCGTACTTTA CTCTAAGCCA TCCTGACCTG ATATTTGAAG CTATAATAGT GTTTAAAGCA TATCCAGTCT TCGCTATTTT TATGCCTCGT	120 180 240 300 360 420 480 540
189 190 192 193 194 195 196 197 198 199 200 201 202 203	(xi) SE AATGCTACTA ATAGCTAAAC CGTTCGCAGA GTTGCATATT TCCGCAAAAA TTGGAGTTTG TCTTTCGGGC CAGGGTAAAG TTTGAGGGGG AAACATTTTA GGTTTTTATC	(D) TOPOLOGY EQUENCE DESC CTATTAGTAG AGGTTATTGA ATTGGGAATC TAAAACATGT TGACCTCTTA CTTCCGGTCT TTCCTCTTAA ACCTGATTTT ATTCAATGAA CTATTACCCC GTCGTCTGGT GGCGTTATGT	Y: Circular CRIPTION: SH AATTGATGCC CCATTTGCGA AACTGTTACA TGAGCTACAG TCAAAAGGAG GGTTCGCTTT TCTTTTTGAT TGATTTATGAC TATTTATGAC CTCTGGCAAA AAACGAGGGT ATCTGCATTA	ACCTTTTCAG AATGTATCTA TGGAATGAAA CACCAGATTC CAATTAAAGG GAAGCTCGAA GCAATCCGCT TCATTCTCGT GATTCCGCAG ACTTCTTTTG TATGATAGTG GTTGAATGTG	CTCGCGCCCC ATGGTCAAAC CTTCCAGACA AGCAATTAAG TACTCTCTAA TTAAAACGCG TTGCTTCTGA TTTCTGAACT TATTGGACGC CAAAAGCCTC TTGCTCTTAC GTATTCCTAA	TAAATCTACT CCGTACTTTA CTCTAAGCCA TCCTGACCTG ATATTTGAAG CTATAATAGT GTTTAAAGCA TATCCAGTCT TCGCTATTTT TATGCCTCGT ATCTCAACTG	120 180 240 300 360 420 480 540 600 660
189 190 192 193 194 195 196 197 198 199 200 201 202 203 204	(xi) SE AATGCTACTA ATAGCTAAAC CGTTCGCAGA GTTGCATATT TCCGCAAAAA TTGGAGTTTG TCTTTCGGGC CAGGGTAAAG TTTGAGGGGG AAACATTTTA GGTTTTTATC AATTCCTTTT ATGAATCTTT	(D) TOPOLOGY EQUENCE DESC CTATTAGTAG AGGTTATTGA ATTGGGAATC TAAAACATGT TGACCTCTTA CTTCCTGGTCT TTCCTCTTAA ACCTGATTTT ATTCAATGAA CTATTACCCC GTCGTCTGGT GGCGTTATGT CTACCTGTTAT	Y: Circular CRIPTION: SH AATTGATGCC CCATTTGCGA AACTGTTACA TGAGCTACAG TCAAAAGGAG GGTTCGCTTT TCTTTTTGAT TGATTTATGAC TATTTATGAC CTCTGGCAAA AAACGAGGGT ATCTGCATTA TAATGTTGTTATATGAC TATTTATGAC	ACCTTTTCAG AATGTATCTA TGGAATGAAA CACCAGATTC CAATTAAAGG GAAGCTCGAA GCAATCCGCT TCATTCTCGT GATTCCGCAG ACTTCTTTG TATGATAGTG GTTGAATGTG CCGTTAGTTC	CTCGCGCCCC ATGGTCAAAC CTTCCAGACA AGCAATTAAG TACTCTCTAA TTAAAACGCG TTGCTTCTGA TTTCTGAACT TATTGGACGC CAAAAGCCTC TTGCTCTTAC GTATTCCTAA GTTTTATTAA	TAAATCTACT CCGTACTTTA CTCTAAGCCA TCCTGACCTG ATATTTGAAG CTATAATAGT GTTTAAAGCA TATCCAGTCT TCGCTATTTT TATGCCTCGT ATCTCAACTG CGTAGATTTT	120 180 240 300 360 420 480 540 600 660 720
189 190 192 193 194 195 196 197 198 199 200 201 202 203 204 205	(xi) SE AATGCTACTA ATAGCTAAAC CGTTCGCAGA GTTGCATATT TCCGCAAAAA TTGGAGTTTG TCTTTCGGGC CAGGGTAAAG TTTGAGGGGG AAACATTTTA GGTTTTTATC AATTCCTTTT ATGAATCTTT TCTTCCCAAC	(D) TOPOLOGY EQUENCE DESC CTATTAGTAG AGGTTATTGA ATTGGGAATC TAAAACATGT TGACCTCTTA CTTCCGGTCT TTCCTCTTAA ACCTGATTTT ATTCAATGAA CTATTACCCC GTCGTCTGGT GGCGTTATGT CTACCTGTAA GTCCTGACTG	Y: Circular CRIPTION: SH AATTGATGCC CCATTTGCGA AACTGTTACA TGAGCTACAG TCAAAAGGAG GGTTCGCTTT TCTTTTTGAT TGATTTATGAC TATTTATGAC CTCTGGCAAA AAACGAGGGT ATCTGCATTA TAATGTTGTT GTATTATGAC	ACCTTTTCAG AATGTATCTA TGGAATGAAA CACCAGATTC CAATTAAAGG GAAGCTCGAA GCAATCCGCT TCATTCTCGT GATTCCGCAG ACTTCTTTTG TATGATAGTG GTTGAATGTG CCGTTAGTTC CCAGTTCTTA	CTCGCGCCCC ATGGTCAAAC CTTCCAGACA AGCAATTAAG TACTCTCTAA TTAAAACGCG TTGCTTCTGA TTTCTGAACT TATTGGACGC CAAAAGCCTC TTGCTCTTAC GTATTCCTAA GTTTTATTAA AAATCGCATA	TAAATCTACT CCGTACTTTA CTCTAAGCCA TCCTGACCTG ATATTTGAAG CTATAATAGT GTTTAAAGCA TATCCAGTCT TCGCTATTTT TATGCCTCGT ATCTCAACTG CGTAGATTTT AGGTAATTCA	120 180 240 300 360 420 480 540 600 660 720 780 840
189 190 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206	(xi) SE AATGCTACTA ATAGCTAAAC CGTTCGCAGA GTTGCATATT TCCGCAAAAA TTGGAGTTTG TCTTTCGGGC CAGGGTAAAG TTTGAGGGGG AAACATTTTA GGTTTTTATC AATTCCTTTT ATGAATCTTT TCTTCCCAAC CAATGATTAA	(D) TOPOLOGY EQUENCE DESC CTATTAGTAG AGGTTATTGA ATTGGGAATC TAAAACATGT TGACCTCTTA CTTCCGGTCT TTCCTCTTAA ACCTGATTTT ATTCAATGAA CTATTACCCC GTCGTCTGGT GGCGTTATGT CTACCTGTAA GTCCTGACTG AGTTGAAATT	Y: Circular CRIPTION: SH AATTGATGCC CCATTTGCGA AACTGTTACA TGAGCTACAG TCAAAAGGAG GGTTCGCTTT TCTTTTTGAT TGATTTATGAC CTCTGGCAAA AAACGAGGGT ATCTGCATTA TAATGTTGTT GTATAATGAG AAACCATCTC	ACCTTTTCAG AATGTATCTA TGGAATGAAA CACCAGATTC CAATTAAAGG GAAGCTCGAA GCAATCCGCT TCATTCTCGT GATTCCGCAG ACTTCTTTTG TATGATAGTG GTTGAATGTG CCGTTAGTTC CCAGTTCTTA AAGCCCAATT	CTCGCGCCCC ATGGTCAAAC CTTCCAGACA AGCAATTAAG TACTCTCTAA TTAAAACGCG TTGCTTCTGA TTTCTGAACT TATTGGACGC CAAAAGCCTC TTGCTCTTAC GTATTCCTAA GTTTTATTAA AAATCGCATA TACTACTCGT	TAAATCTACT CCGTACTTTA CTCTAAGCCA TCCTGACCTG ATATTTGAAG CTATAATAGT GTTTAAAGCA TATCCAGTCT TCGCTATTTT TATGCCTCGT ATCTCAACTG CGTAGATTTT AGGTAATTCA TCTGGTGTTT	120 180 240 300 360 420 480 540 600 660 720 780 840 900
189 190 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207	(xi) SE AATGCTACTA ATAGCTAAAC CGTTCGCAGA GTTGCATATT TCCGCAAAAA TTGGAGTTTG TCTTTCGGGC CAGGGTAAAG TTTGAGGGGG AAACATTTTA GGTTTTTATC AATTCCTTTT ATGAATCTTT TCTTCCCAAC CAATGATTAA CTCGTCAGGG	(D) TOPOLOGY EQUENCE DESC CTATTAGTAG AGGTTATTGA ATTGGGAATC TAAAACATGT TGACCTCTTA CTTCCGGTCT TTCCTCTTAA ACCTGATTTT ATTCAATGAA CTATTACCCC GTCGTCTGGT GGCGTTATGT CTACCTGTAA GTCCTGACTG AGTTGAAATT CAAGCCTTAT	Y: Circular CRIPTION: SH AATTGATGCC CCATTTGCGA AACTGTTACA TGAGCTACAG TCAAAAGGAG GGTTCGCTTT TCTTTTTGAT TGATTTATGAC CTCTGGCAAA AAACGAGGGT ATCTGCATTA TAATGTTGTT GTATAATGAC AAACGATTA TAATGTTGTT GTATAATGAG AAACCATCTC TCACTGAATG	ACCTTTTCAG AATGTATCTA TGGAATGAAA CACCAGATTC CAATTAAAGG GAAGCTCGAA GCAATCCGCT TCATTCTCGT GATTCCGCAG ACTTCTTTTG TATGATAGTG GTTGAATGTG CCGTTAGTTC CCAGTTCTTA AAGCCCAATT AGCAGCTTTG	CTCGCGCCCC ATGGTCAAAC CTTCCAGACA AGCAATTAAG TACTCTCTAA TTAAAACGCG TTGCTTCTGA TTTCTGAACT TATTGGACGC CAAAAGCCTC TTGCTCTTAC GTATTCCTAA GTTTTATTAA AAATCGCATA TACTACTCGT TTACGTTGAT	TAAATCTACT CCGTACTTTA CTCTAAGCCA TCCTGACCTG ATATTTGAAG CTATAATAGT GTTTAAAGCA TATCCAGTCT TCGCTATTTT TATGCCTCGT ATCTCAACTG CGTAGATTTT AGGTAATTCA TCTGGTGTTT TTGGGTAATG	120 180 240 300 360 420 480 540 600 660 720 780 840
189 190 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208	(xi) SE AATGCTACTA ATAGCTAAAC CGTTCGCAGA GTTGCATATT TCCGCAAAAA TTGGAGTTTG TCTTTCGGGC CAGGGTAAAG TTTGAGGGGG AAACATTTTA GGTTTTTATC AATTCCTTTT ATGAATCTTT TCTTCCCAAC CAATGATTAA CTCGTCAGGG AATATCCGT	(D) TOPOLOGY EQUENCE DESC CTATTAGTAG AGGTTATTGA ATTGGGAATC TAAAACATGT TGACCTCTTA CTTCCGGTCT TTCCTCTTAA ACCTGATTTT ATTCAATGAA CTATTACCCC GTCGTCTGGT GGCGTTATGT CTACCTGTAA GTCCTGACTG AGTTGAAATT CAAGCCTTAT TCTTGTCAAG	Y: Circular CRIPTION: SH AATTGATGCC CCATTTGCGA AACTGTTACA TGAGCTACAG TCAAAAGGAG GGTTCGCTTT TCTTTTTGAT TGATTTATGG TATTTATGAC CTCTGGCAAA AAACGAGGGT ATCTGCATTA TAATGTTGTT GTATAATGAG AAACCATCTC TCACTGAATG ATTACTCTTG	ACCTTTTCAG AATGTATCTA TGGAATGAAA CACCAGATTC CAATTAAAGG GAAGCTCGAA GCAATCCGCT TCATTCTCGT GATTCCGCAG ACTTCTTTG TATGATAGTG GTTGAATGTG CCGTTAGTTC CCAGTTCTTA AAGCCCAATT AGCAGCTTTG ATGAAGGTCA	CTCGCGCCCC ATGGTCAAAC CTTCCAGACA AGCAATTAAG TACTCTCTAA TTAAAACGCG TTGCTTCTGA TTTCTGAACT TATTGGACGC CAAAAGCCTC TTGCTCTTAC GTATTCCTAA GTTTTATTAA AAATCGCATA TACTACTCGT TTACGTTGAT GCCAGCCTAT	TAAATCTACT CCGTACTTTA CTCTAAGCCA TCCTGACCTG ATATTTGAAG CTATAATAGT GTTTAAAGCA TATCCAGTCT TCGCTATTTT TATGCCTCGT ATCTCAACTG CGTAGATTTT AGGTAATTCA TCTGGTGTTT TTGGGTAATG GCGCCTGGTC	120 180 240 300 360 420 480 540 600 660 720 780 840 900 960 1020
189 190 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209	(xi) SE AATGCTACTA ATAGCTAAAC CGTTCGCAGA GTTGCATATT TCCGCAAAAA TTGGAGTTTG TCTTTCGGGC CAGGGTAAAG TTTGAGGGGG AAACATTTTA GGTTTTTATC AATTCCTTTT ATGAATCTTT TCTTCCCAAC CAATGATTAA CTCGTCAGGG AATATCCGTT TGTACACCGT	(D) TOPOLOGY EQUENCE DESC CTATTAGTAG AGGTTATTGA ATTGGGAATC TAAAACATGT TGACCTCTTA CTTCCGGTCT TTCCTCTTAA ACCTGATTTT ATTCAATGAA CTATTACCCC GTCGTCTGGT CTACCTGTAA GTCCTGACTG AGTTGAAATT CAAGCCTTAT TCTTGTCAAG TCATCTGTCA	Y: Circular CRIPTION: SH AATTGATGCC CCATTTGCGA AACTGTTACA TGAGCTACAG TCAAAAGGAG GGTTCGCTTT TCTTTTTGAT TGATTTATGAC CTCTGGCAAA AAACGAGGGT ATCTGCATTA TAATGTTGTT GTATAATGAG AAACCATCTC TCACTGAATG ATTACTCTTG ATTACTCTTG TCTTTCAAAG	ACCTTTTCAG AATGTATCTA TGGAATGAAA CACCAGATTC CAATTAAAGG GAAGCTCGAA GCAATCCGCT TCATTCTCGT GATTCCGCAG ACTTCTTTTG TATGATAGTG GTGAATGTG CCGTTAGTTC CCAGTTCTTA AAGCCCAATT AGCAGCTTTG ATGAAGGTCA TTGGTCAGTT	CTCGCGCCCC ATGGTCAAAC CTTCCAGACA AGCAATTAAG TACTCTCTAA TTAAAACGCG TTGCTTCTGA TTTCTGAACT TATTGGACGC CAAAAGCCTC TTGCTCTTAC GTATTCCTAA GTTTTATTAA AAATCGCATA TACTACTCGT TTACGTTGAT CCCAGCCTAT CCGGTTCCCTT	TAAATCTACT CCGTACTTTA CTCTAAGCCA TCCTGACCTG ATATTTGAAG CTATAATAGT GTTTAAAGCA TATCCAGTCT TCGCTATTTT TATGCCTCGT ATCTCAACTG CGTAGATTTT AGGTAATTCA TCTGGTGTTT TTGGGTAATG GCGCCTGGTC ATGATTGCC	120 180 240 300 360 420 480 540 600 660 720 780 840 900 960 1020 1080
189 190 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210	(xi) SE AATGCTACTA ATAGCTAAAC CGTTCGCAGA GTTGCATATT TCCGCAAAAA TTGGAGTTTG TCTTTCGGGC CAGGGTAAAG TTTGAGGGGG AAACATTTTA GGTTTTTATC AATTCCTTTT ATGAATCTTT TCTTCCCAAC CAATGATTAA CTCGTCAGGG AATATCCGTT TGTACACCGT TGTACACCGT GTCTGCGCCT	(D) TOPOLOGY EQUENCE DESC CTATTAGTAG AGGTTATTGA ATTGGGAATC TAAAACATGT TGACCTCTTA CTTCCGGTCT TTCCTCTTAA ACCTGATTT ATTCAATGAA CTATTACCCC GTCGTCTGGT GGCGTTATGT CTACCTGTAA GTCCTGAATT CTACCTGAATT CTACCTGAATT CTACCTGAATT CTACCTGAATT CAAGCCTTAT TCTTGTCAAG TCATCTGTCC CGTTCCGGCT	Y: Circular CRIPTION: SH AATTGATGCC CCATTTGCGA AACTGTTACA TGAGCTACAG TCAAAAGGAG GGTTCGCTTT TCTTTTTGAT TGATTTATGAC CTCTGGCAAA AAACGAGGGT ATCTGCATTA TAATGTTGTT GTATAATGAG AAACCATCTC TCACTGAATG ATTACTCTTG AGTAACATG	ACCTTTTCAG AATGTATCTA TGGAATGAAA CACCAGATTC CAATTAAAGG GAAGCTCGAA GCAATCCGCT TCATTCTCGT GATTCCGCAG ACTTCTTTTG TATGATAGTG CCGTTAGTTC CCAGTTCTTA AAGCCCAATT AGCAGCTTTG ATGAAGGTCA TTGGTCAGTTC TTGGTCAGTTC CAGTTCTTT	CTCGCGCCCC ATGGTCAAAC CTTCCAGACA AGCAATTAAG TACTCTCTAA TTAAAACGCG TTGCTTCTGA TTTCTGAACT TATTGGACGC CAAAAGCCTC TTGCTCTTAC GTATTCCTAA GTTTTATTAA AAATCGCATA TACTACTCGT TTACGTTGAT GCCAGCCTAT CGGTTCCCTT CGGATTTCGA	TAAATCTACT CCGTACTTTA CTCTAAGCCA TCCTGACCTG ATATTTGAAG CTATAATAGT GTTTAAAGCA TATCCAGTCT TCGCTATTTT TATGCCTCGT ATCTCAACTG CGTAGATTTT AGGTAATTCA TCTGGTGTTT TTGGGTAATG GCGCCTGGTC ATGATTGACC CACAATTTAT	120 180 240 300 360 420 480 540 600 660 720 780 840 900 960 1020 1080 1140
189 190 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210	(XI) SE AATGCTACTA ATAGCTAAAC CGTTCGCAGA GTTGCATATT TCCGCAAAAA TTGGAGTTTG TCTTTCGGGC CAGGGTAAAG TTTGAGGGGG AAACATTTTA GGTTTTTATC AATTCCTTTT ATGAATCTTT TCTTCCCAAC CAATGATTAA CTCGTCAGGG AATATCCGGT TGTACACCGT GTCTGCGCCT CAGGCGATGA	(D) TOPOLOGY EQUENCE DESC CTATTAGTAG AGGTTATTGA ATTGGGAATC TAAAACATGT TGACCTCTTA CTTCCGGTCT TTCCTCTTAA ACCTGATTT ATTCAATGAA CTATTACCCC GTCGTCTGGT GGCGTTATGT CTACCTGTAA GTCCTGAATT CTACCTGAATT CTACCTGAATT CTACCTGAATT CTACCTGAATT CTACCTGAATT CTACCTGAATT CAAGCCTTAT TCTTGTCAAG TCATCTGTCC CGTTCCGGCT TACAAATCTC	Y: Circular CRIPTION: SE AATTGATGCC CCATTTGCGA AACTGTTACA TGAGCTACAG TCAAAAGGAG GGTTCGCTTT TCTTTTTGAT TGATTTATGAC CTCTGGCAAA AAACGAGGGT ATCTGCATTA TAATGTTGTT GTATAATGAG AAACCATCTC TCACTGAATG ATTACTCTTG ATTACTCTTG ATTACTCTTG CGTTTCAAAG AAGTAACATG CGTTGTACTT	ACCTTTTCAG AATGTATCTA TGGAATGAAA CACCAGATTC CAATTAAAGG GAAGCTCGAA GCAATCCGCT TCATTCTCGT GATTCCGCAG ACTTCTTTTG TATGATAGTG CCGTTAGTTC CCAGTTCTTA AAGCCCAATT AGCAGCTTTG ATGAAGGTCA TTGGTCAGTT GTGAAGGTCA TTGGTCAGTT GAGCAGGTCG TGTTTCGCGC	CTCGCGCCCC ATGGTCAAAC CTTCCAGACA AGCAATTAAG TACTCTCTAA TTAAAACGCG TTGCTTCTGA TTTCTGAACT TATTGGACGC CAAAAGCCTC TTGCTCTTAC GTATTCCTAA GTTTTATTAA AAATCGCATA TACTACTCGT TTACGTTGAT GCCAGCCTAT CGGTTCCCTT CGGATTTCGA TTGGTTTAAT	TAAATCTACT CCGTACTTTA CTCTAAGCCA TCCTGACCTG ATATTTGAAG CTATAATAGT GTTTAAAGCA TATCCAGTCT TCGCTATTTT TATGCCTCGT ATCTCAACTG CGTAGATTTT AGGTAATTCA TCTGGTGTT TTGGGTAATG GCGCCTGGTC ATGATTGACC CACAATTTAT CGCTGGGGGT	120 180 240 300 360 420 480 540 600 660 720 780 840 900 960 1020 1080 1140 1200
189 190 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211 212	(xi) SE AATGCTACTA ATAGCTAAAC CGTTCGCAGA GTTGCATATT TCCGCAAAAA TTGGAGTTTG TCTTTCGGGC CAGGGTAAAG TTTGAGGGGG AAACATTTTA GGTTTTTATC AATTCCTTTT ATGAATCTTT TCTTCCCAAC CAATGATTAA CTCGTCAGGG AATATCCGTT TGTACACCGT TGTACACCGT GTCTGCGCCT	(D) TOPOLOGY EQUENCE DESC CTATTAGTAG AGGTTATTGA ATTGGGAATC TAAAACATGT TGACCTCTTA CTTCCGGTCT TTCCTCTTAA ACCTGATTTT ATTCAATGAA CTATTACCCC GTCGTCTGGT GGCGTTATGT CTACCTGTAA GTCCTGACTG AGTTGAAATT CAAGCCTTAT TCTTGTCAAG TCATCTGTCC CGTTCCGGCT TACAAATCTC TGTTTTAGTG	Y: Circular CRIPTION: SE AATTGATGCC CCATTTGCGA AACTGTTACA TGAGCTACAG TCAAAAGGAG GGTTCGCTTT TCTTTTTGAT TGATTTATGAC CTCTGGCAAA AAACGAGGGT ATCTGCATTA TAATGTTGTT GTATAATGAG AAACCATCTC TCACTGAATG ATTACTCTTG TCTTTCAAAG AAGTAACATG CGTTGTACTT TATTCTTTCG	ACCTTTTCAG AATGTATCTA TGGAATGAAA CACCAGATTC CAATTAAAGG GAAGCTCGAA GCAATCCGCT TCATTCTCGT GATTCCGCAG ACTTCTTTTG TATGATAGTG CCGTTAGTTC CCAGTTCTTA AAGCCCAATT AGCAGCTTTA ATGAAGGTCA TTGGTCAGTT GATGAGTCA TTGGTCAGTT GATGAGGTCA CCGTTTCGTC	CTCGCGCCCC ATGGTCAAAC CTTCCAGACA AGCAATTAAG TACTCTCTAA TTAAAACGCG TTGCTTCTGA TTTCTGAACT TATTGGACGC CAAAAGCCTC TTGCTCTTAC GTATTCCTAA GTTTTATTAA AAATCGCATA TACTACTCGT TTACGTTGAT GCCAGCCTAT CGGTTCCCTT CGGATTTCGA TTTGGTTTGAT TTTGGTTTGAT	TAAATCTACT CCGTACTTTA CTCTAAGCCA TCCTGACCTG ATATTTGAAG CTATAATAGT GTTTAAAGCA TATCCAGTCT TCGCTATTTT TATGCCTCGT ATCTCAACTG CGTAGATTTT AGGTAATTCA TCTGGTGTTT TTGGGTAATG GCGCCTGGTC ATGATTGACC CACAATTTAT CGCTGGGGGT TGCCTTCGTA	120 180 240 300 360 420 480 540 600 660 720 780 840 900 960 1020 1080 1140

RAW SEQUENCE LISTING DATE: 09/21/2004
PATENT APPLICATION: US/10/767,869 TIME: 15:51:21

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Output Set: N:\CRF4\09212004\J767869.raw

214	CAAAGCCTCT	GTAGCCGTTG	CTACCCTCGT	TCCGATGCTG	TCTTTCGCTG	CTGAGGGTGA	1380
215	CGATCCCGCA	AAAGCGGCCT	TTAACTCCCT	GCAAGCCTCA	GCGACCGAAT	ATATCGGTTA	1440
216	TGCGTGGGCG	ATGGTTGTTG	TCATTGTCGG	CGCAACTATC	GGTATCAAGC	TGTTTAAGAA	1500
217	ATTCACCTCG	AAAGCAAGCT	GATAAACCGA	TACAATTAAA	${\tt GGCTCCTTTT}$	GGAGCCTTTT	1560
218	TTTTTGGAGA	TTTTCAACGT	GAAAAAATTA	TTATTCGCAA	${\tt TTCCTTTAGT}$	TGTTCCTTTC	1620
219	TATTCTCACT	CCGCTGAAAC	TGTTGAAAGT	TGTTTAGCAA	AACCCCATAC	AGAAAATTCA	1680
220	TTTACTAACG	TCTGGAAAGA	CGACAAAACT	TTAGATCGTT	ACGCTAACTA	TGAGGGTTGT	1740
221	CTGTGGAATG	CTACAGGCGT	TGTAGTTTGT	ACTGGTGACG	AAACTCAGTG	TTACGGTACA	1800
222	TGGGTTCCTA	TTGGGCTTGC	TATCCCTGAA	AATGAGGGTG	${\tt GTGGCTCTGA}$	GGGTGGCGGT	1860
223	TCTGAGGGTG	GCGGTTCTGA	GGGTGGCGGT	ACTAAACCTC	CTGAGTACGG	TGATACACCT	1920
224	ATTCCGGGCT	ATACTTATAT	CAACCCTCTC	GACGGCACTT	ATCCGCCTGG	TACTGAGCAA	1980
225	AACCCCGCTA	ATCCTAATCC	TTCTCTTGAG	GAGTCTCAGC	CTCTTAATAC	TTTCATGTTT	2040
226	CAGAATAATA	GGTTCCGAAA	TAGGCAGGGG	GCATTAACTG	TTTATACGGG	CACTGTTACT	2100
227	CAAGGCACTG	ACCCCGTTAA	AACTTATTAC	CAGTACACTC	CTGTATCATC	AAAAGCCATG	2160
228	TATGACGCTT	ACTGGAACGG	TAAATTCAGA	GACTGCGCTT	TCCATTCTGG	CTTTAATGAA	2220
229	GATCCATTCG	TTTGTGAATA	TCAAGGCCAA	TCGTCTGACC	TGCCTCAACC	TCCTGTCAAT	2280
230	GCTGGCGGCG	GCTCTGGTGG	TGGTTCTGGT	GGCGGCTCTG	AGGGTGGTGG	CTCTGAGGGT	2340
231	GGCGGTTCTG	AGGGTGGCGG	CTCTGAGGGA	GGCGGTTCCG	GTGGTGGCTC	TGGTTCCGGT	2400
232	GATTTTGATT	ATGAAAAGAT	GGCAAACGCT	AATAAGGGGG	CTATGACCGA	AAATGCCGAT	2460
233	GAAAACGCGC	TACAGTCTGA	CGCTAAAGGC	AAACTTGATT	CTGTCGCTAC	TGATTACGGT	2520
234	GCTGCTATCG	ATGGTTTCAT	TGGTGACGTT	TCCGGCCTTG	CTAATGGTAA	TGGTGCTACT	2580
235	GGTGATTTTG	CTGGCTCTAA	TTCCCAAATG	GCTCAAGTCG	GTGACGGTGA	TAATTCACCT	2640
236	TTAATGAATA	ATTTCCGTCA	ATATTTACCT	TCCCTCCCTC	AATCGGTTGA	ATGTCGCCCT '	2700
237	TTTGTCTTTA	GCGCTGGTAA	ACCATATGAA	TTTTCTATTG	ATTGTGACAA	AATAAACTTA	2760
238	TTCCGTGGTG	TCTTTGCGTT	TCTTTTATAT	GTTGCCACCT	TTATGTATGT	ATTTTCTACG	2820
239	TTTGCTAACA	TACTGCGTAA	TAAGGAGTCT	TAATCATGCC	AGTTCTTTTG	GGTATTCCGT	2880
240	TATTATTGCG	TTTCCTCGGT	TTCCTTCTGG	TAACTTTGTT	CGGCTATCTG	CTTACTTTTC	2940
241	TTAAAAAGGG	CTTCGGTAAG	ATAGCTATTG	CTATTTCATT	GTTTCTTGCT	CTTATTATTG	3000
242	GGCTTAACTC	AATTCTTGTG	GGTTATCTCT	CTGATATTAG	CGCTCAATTA	CCCTCTGACT	3060
243	TTGTTCAGGG	TGTTCAGTTA	ATTCTCCCGT	CTAATGCGCT	TCCCTGTTTT	TATGTTATTC	3120
244	TCTCTGTAAA	GGCTGCTATT	TTCATTTTTG	ACGTTAAACA	AAAAATCGTT	TCTTATTTGG	3180
245	ATTGGGATAA	ATAATATGGC	TGTTTATTTT	GTAACTGGCA	AATTAGGCTC	TGGAAAGACG	3240
246	CTCGTTAGCG	TTGGTAAGAT	TCAGGATAAA	ATTGTAGCTG	GGTGCAAAAT	AGCAACTAAT	3300
247	CTTGATTTAA	GGCTTCAAAA	CCTCCCGCAA	GTCGGGAGGT	TCGCTAAAAC	GCCTCGCGTT	3360
248	CTTAGAATAC	CGGATAAGCC	TTCTATATCT	GATTTGCTTG	CTATTGGGCG	CGGTAATGAT	3420
249	TCCTACGATG	AAAATAAAA	CGGCTTGCTT	GTTCTCGATG	AGTGCGGTAC	TTGGTTTAAT	3480
250	ACCCGTTCTT	GGAATGATAA	GGAAAGACAG	CCGATTATTG	ATTGGTTTCT	ACATGCTCGT	3540
251	AAATTAGGAT	GGGATATTAT	TTTTCTTGTT	CAGGACTTAT	CTATTGTTGA	TAAACAGGCG	3600
252	CGTTCTGCAT	TAGCTGAACA	TGTTGTTTAT	TGTCGTCGTC	TGGACAGAAT	TACTTTACCT	3660
253	TTTGTCGGTA	CTTTATATTC	TCTTATTACT	GGCTCGAAAA	TGCCTCTGCC	TAAATTACAT	3720
254	GTTGGCGTTG	TTAAATATGG	CGATTCTCAA	TTAAGCCCTA	CTGTTGAGCG	TTGGCTTTAT	3780
255	ACTGGTAAGA	ATTTGTATAA	CGCATATGAT	ACTAAACAGG	CTTTTTCTAG	TAATTATGAT	3840
				TTATCACACG			3900
				ATATATTTGA			3960
				ACATATAGTT			4020
				GATTTTGATA			4080
				TTCAAGGATT			4140
				CTCACATATA			4200
				AAATGTAATT			4260

RAW SEQUENCE LISTING ERROR SUMMARY

DATE: 09/21/2004

PATENT APPLICATION: US/10/767,869

TIME: 15:51:22

Input Set : A:\66797-397.txt

Output Set: N:\CRF4\09212004\J767869.raw

Invalid Line Length:

The rules require that a line not exceed 72 characters in length. This includes spaces.

Seq#:8; Line(s) 794

VERIFICATION SUMMARY

DATE: 09/21/2004 TIME: 15:51:22

PATENT APPLICATION: US/10/767,869

Input Set : $A:\66797-397.txt$

Output Set: N:\CRF4\09212004\J767869.raw

L:29 M:220 C: Keyword misspelled or invalid format, [(A) APPLICATION NUMBER:] L:30 M:220 C: Keyword misspelled or invalid format, [(B) FILING DATE:]